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## AN ANALYSIS OF MENTAL DEFECTS.

THEORIES are to be judged in two ways. Either they point out long-range betterments, or they remedy specific defects. The one group are evolutionary, the other psychologic. In the controversy about acquired characters neither disputant has told us how to make improvements. They come more slowly according to one plan than to the other, but in neither case do they come rapidly enough to be capable of observation. All we can do is to sit on the fence and await the outcome. A million years from now we may be able to say which is correct, but a hundred years from now we shall be no better off than at present. Psychologists have a strong temptation to turn their theories into evolutionary hypotheses, but when they do they may gain a great personal satisfaction without conferring any benefit on a suffering humanity.

The test of any psychologic theory is that it leads to a cure. Some group of evils must be isolated from its complex causes and removed. No theory of psychic evolution, however fascinating, can make up for the lack of immediate effects. I say this because we now have under consideration a psychic theory which is partly evolutionary yarn-spinning and partly a cure, but as yet its advocates have not isolated the two elements. Dr. Freud is a man with a cure who seems to be trying harder to be an evolutionary philosopher than to be a physician. As a result a real curative measure is plastered over with a philosophy both

mystical and flabby. It will be well, therefore, to emphasize his curative methods and thus isolate his psychic principles from the philosophy in which he delights.

My reason for making this contrast is that I have been presenting to the readers of *The Monist* an evolutionary theory which seems to me more satisfactory than the reasoning in vogue. If I stop here I may win out in a million years and then have a monument erected over my remains if they can be found, but on the present I would not have had the slightest influence. I want therefore in this article to show the value of the theory presented by its application to psychic defects. I shall leave out of this presentation all parts of the theory except those which bear on curative processes, but to do this I shall be compelled also to isolate the psychic principles of the Freudian school from their fondly cherished evolutionary theories. No one can sanely start a curative process without acknowledging his indebtedness to Dr. Freud, nor can he go far without throwing overboard the load of philosophy by which his cures are obscured.

Let me state a maxim which seems to isolate me from him but which after all brings us more closely together. Psychology isolates false remedies from the true, but as soon as the evil is located the cure depends on some objective change. The origin of fevers was as mystical as any problem Dr. Freud handles until the relation of mosquitoes to fever was discovered. Cutting out a thousand supposed causes of fever, the psychic effects showed themselves in an altered attitude of hygienists but the cure came from altering certain objective conditions. Such, it seems to me, is the test of every psychic theory. It does change attitudes but it must also point out the specific changes needed to make it effective. This means that cures are effected only as psychic disturbances are traced to their physical antecedents.

For this reason I deem the Freudian analysis of the subconscious defective. The classes formed depend on types of behavior when they should be made to correspond to the forces active in the physical background. Similarity of behavior may arise from radically different causes. The psychologist is thus apt to consider as ultimate what is in reality complex. He may talk in terms of instincts, or, if he be a Freudian, he substitutes wishes for them. I have no desire to combat the wish hypothesis, but when stated in terms of physical antecedents wishes separate themselves into two classes one of which is not a wish if the term is to be used in any definite way. A true wish is an incentive to action. An avertive wish is a restraint on action. I wish to do and I wish to restrain myself from doing. Both motives are real but the mechanism through which they act is radically different.

I shall explain this by a criticism of a familiar Freudian concept. A boy loves his mother and hates his father while a girl loves the father and dislikes her mother. Is this opposition to the parent of the same sex something that bubbles up from the subconscious world or are the causes physical and objective? My reply is that all hates have definite physical antecedents and are formed by a conscious process. Back of every hate are two things, a shock and a fear. The shock is some happening of the objective world, the fear is the reaction of the nervous system to the shock. The effect of this on parents and children is that discipline is enforced by the parent of the same sex while there is a laxness of discipline between parent and child of the opposite sex. Girls are disciplined by their mother, boys by their father. Mothers sympathize with boys when they are disciplined and fathers with their daughters. It seldom happens therefore that boys and girls grow up without thinking they have some grievance against the parent of their sex, and this grievance is augmented by the

feeling that the other parent encouraged this belief. But there is more than this; parents use their children of the opposite sex to arouse their own sex feelings. When a woman presses her boy to her bosom or a father handles his daughter's frame he or she may think that the resulting emotion is parental, but analysis shows that the emotion is sexual. Thus in innocence and also in ignorance a sex relation is established which, reacting on the child, excites a premature sexual development. The boy is thus sexually drawn to his mother while through coercive discipline he becomes antagonistic to his father. That elements of the father and mother complexes arise in this way can be explained without the use of subconscious philosophy. In the facts we agree but not in their antecedents. Wishes are compulsive and avertive, the compulsive are real wishes; the avertive are the result of shocks and fears. An objective impressment may create behavior similar to a subjective compulsion, but their differences become apparent as soon as a transfer is made to the objective background.

A wish is a subconscious urge. An instinct is a nervous mechanism. A shock is a sudden impressment injurious to the nervous system. How do three things so distinct get confused with each other? The cause, as I see it, is the tendency of an organism to convert what is injurious into something beneficial. It tries therefore to cover up the shock or to convert it into something not injurious. If either of these processes could work with complete success shocks would be of slight importance. But if covered up they are still there, and if transformed they may in the end become more injurious than in their original form. This is why if stripped of their disguises they become harmless. The new conditions are usually such that the original shock is not likely to be repeated while the disguised shock is of frequent occurrence.

The rise of hatred against Germany during the late war illustrates how shocks and fears are a conscious process. Americans were shocked by the way in which the Germans carried on the war. The sinking of ships, the killing of innocent women, the brutal invasion of Belgium pained all who heard of them. But this alone did not cause an entrance into the war. To it was added a fear of Germans evoked by vivid descriptions of the invasion of America by German armies. Now fear is added to shock, then comes hate and a wish to destroy. What was once shock and fear thus becomes patriotism by which the source of these new feelings is concealed. The soldier thought not in terms of shock and fear but in those of a lofty idealism, and yet the latter is merely the former disguised by the processes of his conscious thought. Jew-baiting affords another example of this thought-transformation. The anti-Semite starts his argument by a description of the vile character of the Jews. This is the shock element. Then he asserts that the Jews are driving everybody to the wall. This is the fear element. Race hatreds arise in this way and are as intense as the two elements are pronounced. But the process is logical even if the logic is bad. There is no instinctive subconscious race hatred. All its elements are in the foreconsciousness and the processes by which it grows are those familiar to every thinker. We shall get rid of race hatred by removing the shocks and fears which arise from race contacts, and not by altering human nature. Heredity has faults enough without being made the goat in this respect.

The facts needing explanation relate the method by which shocks are submerged. Odd as the process seems, its origin is not in the subconscious field but in the working of a principle which lies at the basis of all logic. Every logical process proceeds by the substitution of one term for another; if deductive, the substitution is that of a class

put in the place of a specific antecedent. We thus rise from individual perceptions to that of classes. Shocks differ from ordinary sensations in their vividness, much of which is lost if we think not of a particular shock but of the class to which it belongs. If a man does another an injury he either says all men are like this one and therefore bad, or this man is an exception and by this judgment softens the injury done. In either case we have transferred our thought from an individual to a class and judge accordingly.

In ordinary thought the particular is absorbed in the general, but if the shock is severe it does not lose its individuality but remains a submerged concept ready to disrupt the general concept if circumstances favor. When it reappears it has a new dress because it appears as a symbol and not in its original form. Anything in a class may become a symbol of any particular of the class. There is thus a transfer of identity. An injury done by a red-haired man may arouse an antagonism to all red-haired men or to any group of objects colored red. It may also be expressed in an opposition to some one element of the class, this element thus becoming the symbol of the original antipathy. When this happens the symbol chosen is some more familiar form of the original shock-producing object. The bark of a wolf might produce the original shock, but if not symbolized the shock would perhaps never recur. If we make a dog the symbol of the wolf the recurrence of the shock comes often since barking dogs are a frequent occurrence. The injury of a shock is thus increased when its cause reappears as a symbol.

The principle involved may be stated thus: A substitution is a shift from a particular to the class to which it belongs, after which there is a reversion to the familiar of the class. A shock thus shifts from its source to the more familiar of the class to which it belongs. The symbol of a shock is much more detrimental than the shock because it

presents itself more often. We can thus see how shocks become submerged and how in their symbolic form they are more injurious than in their original expression. A vast number of objects or single objects of more frequent occurrence may thus arouse the shock reaction and spread its injury.

It is this fact that renders the discovery of the original shock of so much importance in effecting a cure. The original may have passed from memory or be confused with other events in ways to make the isolation difficult, yet if the rediscovery can be made a new group of associations will soon obliterate it, but if not discovered it cannot be removed by any rational procedure. Yet in spite of impotence the process by which shocks are symbolized is typically logical because it is due to the conscious process of substitution. To confuse these happenings with what is really subconscious destroys all hope of clear analysis and blocks the way to fresh psychological discoveries. Shocks are not wishes even if a shock leads to a wish. The wish of this sort being avertive can only by courtesy be given the same name as compulsive acts which are truly subconscious. When the forces of these facts are recognized the many forms which shock disguises take become apparent. They may not affect health enough to create the need of a physician, but they are detrimental even in the case of normal people.

Of these, superstitions make a prominent class. They have concrete antecedents which, if they were not symbolized, would be legitimate restraints on action. But for the concrete injury is substituted a class which is made vivid by some apt saying arousing shock reactions and evoking fear. Familiar objects like a cat, colors like black or sounds like a croak, thus get a significance which thwarts rational explanation. Of these, death omens are the most frequent. Specific scenes are covered by the transforma-



tion and associated with the most innocent events. Three candles in a row or thirteen at a table would be meaningless to a person who never had had a death shock, but once death or misfortune has occurred and fear is aroused the particular source may be forgotten and yet reappear in a thousand disguised forms. It is interesting to find that a premise formed by a logical process never can be reversed by the use of logical argumentation. The symbol is always attributed to some other cause than the one to which it is due. Instead of analyzing this thought, the victim of a superstition creates still another superclass and from it argues backward to sustain his premise. He thus gets farther away from, instead of nearer to, the real origin and becomes more stubborn in his position. The only solution is to get him to revive his early experience and then his superstition decays.

Closely allied to superstitions are dogmatic opinions. They start from shocks just as do superstitions and have their origin covered in the same manner. The dogmatist charges against classes what individuals have done. He is never content to denounce John Jones whom he dislikes for reasons good or bad, but forms great classes of which Jones is assumed to be a member. One bad Russian thus turns all Russians into Bolsheviks, and one cruel German transforms his whole nation into Huns. The bad deed may be forgotten but the class becomes enlarged every time it is recalled and thus transformed by some new symbolization.

This process should be distinguished from one that is closely associated with it in name but which, after all, has a different origin. The belief in luck and the fear of misfortune or death are not opposites. Misfortune is a shock due to some specific objective event. Luck is a state of elation due not to specific past happenings but to some expected event. Its origin is thus in a state of mind making it sub-

conscious in the sense that dreams and myths are. I have never had a severe shock and hence have no death or injury superstitions. Three candles in a row or thirteen at a table creates no reaction. But I never see the new moon over my shoulder without thinking of its import. From the way I take my evening walks I see the new moon over my left shoulder about four times as often as over the right, Yet it never depresses. But if I see the moon over my right shoulder I am distinctly elated and expect all the month some pleasing event to happen. I also watch continually for lucky numbers. I cannot keep my eyes off street and railroad cars, automobiles or any other number series. When not in the woods it is no exaggeration to say that I spend a half hour a day figuring out lucky numbers and am elated when I find one. I have, however, no unlucky numbers and am never depressed by any lack of luck.

My explanation the reader may accept or reject as he will, but it throws a fresh light on mental processes. Pleasure is primarily a physical discharge. Glands collect a surplus, and with the final discharge pleasure arises. This is why sex has so prominent an influence on thought. Its discharges excite pleasurable feeling, and whatever promotes discharge is therefore instinctively sought. Elation is one of these. The repressive restraints on organs and glands are thus relaxed as a result of which a discharge takes place. The feeling of luck elates, and the elation promotes discharge. We thus want luck and from it get a satisfaction in the discharge which follows. Every shock transforms itself into something to be feared while every discharge has antecedents by which it is promoted. Evoking a shock and evoking a discharge are thus quite different in their antecedents and consequences even if they are closely associated in the names we give them. The one is the consequent of an event which is forgotten; the other

is the antecedent of an event yet to come. Pleasure has its origin in the subconsciousness while shock and fear arise from external happenings.

One more external pressure on consciousness remains to be analyzed. Shocks are complemented by strains, the difference being that shocks are avertive forces while strains create positive alterations of the conscious field, or, if we use a familiar psychologic term, they alter the threshold of consciousness. Of these strains there are four kinds, muscular, nervous, eye and ear strain; the latter two may, however, be but complex cases of the former, but because of their prevalence and severity they demand special treatment. Muscular strain is primarily caused by tendencies to overdo. We not only overexert the muscles needed for a given movement but we call into activity related muscles which have naught to do with the movement demanded. Few persons undertake such simple movements as rising or walking without using several unnecessary muscles. What we call emotional expression is due to this overflow of energy to muscles not needed for the desired act. If we strike a blow we draw up the muscles of the face; if we give attention we hold our breath; if we strive to restrain sorrow or express joy we do it by muscular contractions or relaxations for which there is no physical need. The result is that groups of muscular complexes arise which through their intensity drain the physical surplus and narrow the number of easily made muscular contractions.

Every muscular complex has not only effect in observable characteristics, but each one also creates a mental complex. The mechanism by which this is done may be explained in various ways, but the fact is beyond dispute. My explanation would be that every muscular contraction darkens some portion of the visual field. Consciousness without any muscular or nervous pressure would be a

circular field the border to which is its threshold. In this field, lines, dots, bars, spaces, and movements obtrude as the nervous and muscular pressure varies. We thus get a series of color and space forms which when symbolized become incentives to action. The basis of thought-interpretations lies in these forms, colors, and their symbols. Thought is normal if its substitutes and interpretations are free. It is abnormal if these ultimate color forms are modified by muscular or nervous complexes. Every habit we acquire and every needless overflow of energy in either channel is thus reflected in consciousness by complexes which narrow and distort our thought.

In contrast to these muscular strains are those of a nervous origin. In these there is an overflow of nervous energy similar to that of muscular strain but from a distinct cause. Nervousness is an exhaustion due to asking too much of the nerves and not to any inherent defects. In the main these causes are two; toxins in the system which excite the nerves to undue action, and the presence of some form of mental conflict. The latter has been so well handled by the Freudian psychologists that further analysis is superfluous. There is always some subconscious wish thwarted by some social convention. The internal pulls in one way; the external drives in another. The central nervous system seeks to harmonize these conflicts and in the end breaks unless the mental conflict is removed. The cause of the break is not nervous nor can it be cured by any nervous appliances. Only by tracing the origin of the conflict can the light be thrown on the antecedents. Social traditions must be altered to effect a cure.

Of late, eye strain has been adequately treated but the same cannot be said of defective hearing. Deafness is of two sorts, one due to an inability to hear; the other to an inability to recognize difference in sound. This is often called nervous deafness, it being assumed that it is caused

by a defect in certain nerves. Be this physical analysis as it may, the mental results are obvious. Thought-processes are due to the association of ideas, many of which are ocular. The lack of recognition of sounds breaks the normal flow of association and thus results in ideas that hover about a given point because there is no open path along which they may move. Many of the worst complexes are created in this way, no cure of which is possible unless the defects of the ear are corrected. A writer on psycho-analysis recently gave this example of the working of the subconscious. A lady could not think of the name Milton. This he attributed to the fact that she formerly had a lover by that name which because of her new love she repressed. As a result she repressed not only the lover but also the word. I do not doubt but that the statement of the facts was correct, but it is the straining of a good theory to the point of absurdity to account for the facts as he did. Most persons as they grow old can remember faces much longer than they remember the descriptive word. This is due to the fact that sound-discrimination fades much earlier than color-associations. Hardly a person of sixty exists who is not troubled in this way and repeatedly says, "I can see the person clearly but I cannot think of his name." If this is a fact, and I think no one will doubt it, many of our mental complexes are due to defective hearing which checks the normal flow of mental association, thus narrowing the shifting of ideas on which accurate thinking depends.

It is but a step from these thought-processes to that of myth-making, back of which is a logic even if it be not that of the books. Scientific calculation is based on visual experience, and its order is that of external events. In contrast to this, natural logic is based on emotional experience, the flow of thought corresponding to the unconscious physical background out of which emotions arise. Each emotion excites its logical successor. Whether the person will

or not, his thought follows the series which the physical background imposes. The interpretation may vary with individual cases but the imposed order does not alter except when broken by some abnormality. Remove this defect and the normal flow returns. This is why the process of myth-making is so important in the interpretation of mental disorders. The physical series is a visual glow, a dark line or body and a rhythm. The glow becomes the sun, the dawn, the maiden, or another of the various symbols of a like import. The dark lines become a prison, a jailer, a dragon, a demon, or like restraints. The rhythm becomes a god, a hero, a savior, a horse, a train of cars, or other symbols of movement. Then comes sacrifice represented by winter, pale colors, death, discipline, and the like. And finally there arise the thoughts of rebirth, redemption, spring, growth, purity, immortality, perfection, and other goals which imply success. This last step comes as a miracle. Dawn is not a logical sequence of night but a freshly wrought miracle. Spring likewise is not a sequence but an ever-recurring break in the natural chain of events. "How can life come from death," the primitive thinker asks. When he sees the change he is freshly astonished each year. No number of recurrences convinces him that it is a normal sequence. It is the emotional order, not the visual which his thought follows. In tragedy and wish-fulfilment he gets more pleasure than in nature study, and thus the repression of emotion and its release fixes this thought-sequence no matter what visual experience demands. Along with a belief in miracles is a belief in luck. Both imply an escape from disaster, a thwarting of natural sequence by extraneous forces. Through one or the other an unexpected deliverance comes; it matters not which so long as the emotional flow completes itself with its accustomed climax.

This may not seem logic, but it is logic in the sense that

it is repeatedly verified by the order of emotional experience. These simple sequences, the maiden, the prison, the hero, the sacrifice, and rebirth, may be symbolized in a thousand ways, but they are always present if thought-processes are normal. The classes into which emotional thought divides itself are not those derived from a scientific nomenclature but from the elements of this series. The moon, a mother, and a death have nothing in common when ideas are based on scientific fact, but they are symbols of the same emotional flow and thus readily replace each other in typical myths. A jail, a bluebeard, and a serpent likewise get in one class because they are the representatives in consciousness of the same physical antecedent. So long as the physiological series works normally the thought-series is compelled to follow. It is a compulsion, not a choice. Deviations from this order imply not a change in experience but some abnormality in the underlying physical mechanisms. From these abnormalities science should be able to detect the physical source and thus effect a cure. The obvious thing in abnormal myth-making is that the miracle does not happen and hence rebirth does not take place. The pleasure of rebirth and its transformations are thus thwarted with the result that the person is thrown back on the first element—the maiden—for his pleasure. This makes him a sex pervert since his pleasure comes by exciting his bodily organs. More important than this is the tendency to turn the hero who normally saves into a destructive demon. The pervert hates those whom, if normal, he would love. His friends or the society of which he is a part becomes a foe he is anxious to destroy. Against them he charges the ills his shortcomings have wrought on himself. We see this in a mild form in the fierce denunciation of others common among those whose thought physical defect or social misfortune has prevented from moving in normal channels. In severe cases it is *dementia praecox*,

a condition which creates an involuntary antagonism to those who in normal states would be viewed as friends.

For this perverted myth-making there is a mental cure since the blocking comes as often from mental as from physical causes. The repression comes from the scientific opposition to the miracle which in myth-making is the antecedent of rebirth. The miracle in myth-making is not in opposition to nature but a belief in extraordinary events. The change from winter to spring is in the myth a miracle but it happens every year by a process capable of scientific explanation. Yet by scientific analysis men lose belief in miracles and the corresponding luck beliefs. A repression of normal processes brings results not unlike what happens when morality represses sex. Science tells us that acquired characters are not inherited, and yet the logic it upholds is acquired. If so, it cannot alter the emotional processes. Men must believe in miracles or become abnormal. Take it away and a distortion of mental processes results. It is this fact which makes religious movements, even when crude, so effective. Reviving the belief in the miraculous they restore confidence in personal achievement. Scientific calculation says, Never do if the expense exceeds the cost. The myth says, Rescue the maiden at any cost. This is the spirit which enables men to do great deeds. The miracle is sure to happen if the happening is worth while. Science must mend its ways if it would be an emotional helpmate.

Myths and superstitions as well as shocks and strains should be put among the conscious mental processes which when done enables the truly unconscious processes to be presented in a garb which permits their explanation. They all seem to be tropic in their origin and unmechanical in their execution. Acts are done because they must be done and not because there are mechanisms by which they are done. This is why they seem mysterious and lawless but



the mystery disappears as soon as the nature of tropic acts is recognized. Tropisms are compulsions due to the direct action of physical forces. They make up for the structural deficiencies of organisms and hold organisms to given behavior until structural deficiencies are removed by some evolutionary development. Then they appear elsewhere in some disguised form.

Tropisms are of three sorts: physical tropisms, blood tropisms, and visual tropisms. I state this series to make plain the difference between it and that in common use. The accustomed order is tropisms, instinct, conscious thought; the source of the latter two being sought in the nerves. Few fundamental laws have been expounded by the students of nerves because the different parts of this series do not have common antecedents. Avertive and compulsive acts are confused under the common title of behavior; nor are the non-mechanical elements in conduct isolated from the structural and mechanical.

In contrast to this the relation of physical tropisms to blood activity becomes apparent as soon as the action of the bodily glands which throw their content into the blood is studied. The blood charged with these products has all the physical elements in it which create physical tropisms and provoke the same responses. In physical terms these effects cannot be readily measured but disguised as emotion they play the same part in the conscious field that their physical counterparts do in bodily action. A man in love acts as a miller in the presence of light. He moves about a woman with the same spasmodic reluctance as does the miller, and the force is as tropic in one case as in the other. There is no nerve in the man which carries these impulses from the sex organs to the brain. The sex glands discharge into the blood and the blood excites the proper mental emotion. The resultant is a tropic compulsion, not an instinct or a nervous reaction. Every

gland produces compulsion of some sort the measurement of which can be made in the resulting emotion.

Visual compulsions are complicated resultants of the same forces. Consciousness is like a plane partly covered by shadows. Each combination of the dark or light thus becomes a form capable of interpretation. Some forms are in silhouette, being combinations of the dark surfaces, while others are the visualization of the light sections. The figures in silhouette become objects of fear while bright objects are regarded with affection. Each form or color becomes a compulsive force which attracts or repulses, as it augments or reduces the flow of the physical forces upon which vital processes depend. The flag, a picture, or a sunset does not act on us through some structure. They create compulsions apart from any mechanism. All art is thus tropic and so is every cosmic enthusiasm.

The opposite of these physical tropisms is a type of disorder scarcely recognized. The various organs of the autonomic system are not connected with each other by a physical mechanism but exert their influence on the other organs by the products they throw into the blood. When each organ of the autonomic system exerts this tropic power, the whole system performs its inherited functions, but any drain on the autonomic system not only reduces its surplus energy but also takes from individual organs this tropic power. The key to a restoration lies in the ancestral stimuli to which the autonomic system readily responds. It is said that the late war relieved the hospitals of their neurasthenic patients and that its close brought them back. It would be fitting to call this disorder auto-asthenia—self-weakness—since the trouble is due to a disease of personality. Personality is acquired through the unified action of the autonomic system without which the central nerves cannot repress abnormal behavior.

A knowledge of these facts is of importance not only

to the helplessly abnormal but to every one who would improve his conduct. This cannot be done without a clear consciousness of the difference between shocks, strains, and tropisms. Each of these antecedents has its indices in consciousness through which they may be studied and detected. Psycho-analysis is thus the true starting-point for the study of mental disorders, but the progress will be slight until mental phenomena are classified not according to their visible similarities but according to the underlying forces whose resultants they are. Cures come not by mental analysis but by the transference of the investigation to physical causes. No thought without a physical antecedent and no antecedent without a mental consequent, is a good axiom for all investigators to adopt. The categories of thought and of its physical background must be brought into harmony, and this can be done only by keeping discussion carefully within physical terms. Only those who are free from physical defect can afford to be blind to its sources and consequents.

There is one more contrast needed to finish this discussion, and that relates to the difference between dreams and myths. Both are tropic in origin, but their mechanism is not the same. Tropic compulsion is accompanied by gland discharges. Dreams in their simpler forms are the mental antecedents of these discharges. When the discharge takes place the person awakes. Dreams both day and night are thus striving for pleasure which leads to a waste of energy. When we follow the lead of pleasure we are sure to incur some physical waste and thus to reduce the effectiveness of adjustive action. Myths are more than a dream because in a dream the person is the center of action. The self remains constant while the viron is always altering through the frequency of substitution. In a myth a hero or god is substituted for the person creating it. The myth-maker sees himself in terms of the

class to which he belongs and thus puts class ends and race enthusiasms in the place of his personal inclination. He thus transforms himself from a mere enjoyer to a doer, and his energy goes out not as mere discharges but as muscular activity directed toward cosmic ends. He becomes will instead of wish and loses the burden of personal motives which conflict with race ends.

I say this to meet the objection raised against the emphasis of physical antecedents to thought. The charges are that such a procedure is material, mechanical, hedonic, and individualistic. All these charges can be readily met. Tropic action is neither material nor mechanical. It antedates the structure which makes action mechanical. It is hedonic and personal only in so far as the individual indulges in day or night dreaming. Art, drama, song, religion, and literature transform this yearning for personal enjoyment into a cosmic endeavor. Should a clear analysis of physical antecedents become the common property of the race it would show personal ends and pleasure-seeking to be a defect and thus lead to a restraint of the tendencies by which they are fostered. A correct analysis of thought-mechanisms does not lead to mechanical thinking and acting but to the highest form of idealism. It is the emotion back of myth-making that in the end dominates both personal and race activity.

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PHILADELPHIA.